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Property in Outer Space: The Common Heritage of Mankind Principle vs. the First in Time, First in Right, Rule of Property

Carol R. Buxton

PROPERTY IN OUTER SPACE: THE COMMON HERITAGE OF MANKIND PRINCIPLE VS. THE "FIRST IN TIME, FIRST IN RIGHT" RULE OF PROPERTY LAW

CAROL R. BUXTON

"The charm of history and its enigmatic lesson consist in the fact that, from age to age, nothing changes and yet everything is completely different."
Aldous Huxley[1]

"*One generation passeth away, and another generation cometh; but the earth abideth forever . . . . The sun also ariseth, and the sun goeth down, and hasteth to the place where he arose . . . .*"
Epigraph to *The Sun Also Rises,* Ernest Hemingway[2]

I. INTRODUCTION

APPROXIMATELY 100,000 YEARS AGO,[3] modern humans began canvassing the earth, spending their days in nomadic existence, in constant quest for food and water. Due to the scant overall population of the earth at that time, and the vastness of the land, humans rarely encountered other human groups.[4] Even in chance meetings, however, one might imagine early confrontations laced with friction and unease, with probable disputes arising over food and water, the essential tools of survival. Nomads gave little thought to the land they crossed while they hunted and gathered; any fighting they engaged in likely involved food (i.e., berries or game), rather than the land beneath their ever-moving feet. They just wanted to survive.

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[1] *See* http://www.nonstopenglish.com/reading/quotations (last visited May 9, 2005).

[2] ERNEST HEMINGWAY, THE SUN ALSO RISES, epigraph (Charles Scribner's Sons 1926) (quoting *Ecclesiastes* 1:3-11).

[3] Smithsonian National Museum of Natural History, Human Origins Program, *at* http://www.mnh.si.edu/anthro/humanorigins/faq/Encarta/encarta.htm (last visited May 9, 2005).

[4] *Id.*

When humans shifted from hunting and gathering to farming roughly 8,000 to 10,000 years ago,[5] life grew easier; no longer forced to perpetually pursue food, man settled into civilized societies. With civilization dawned the idea of property ownership, and man became territorial. Communities drew together in war, not only battling to defend their land from aggressors, but also striking out to conquer more land for themselves. Property ownership blossomed into a symbol of power and wealth, and the age of empire mentality transpired.

Throughout history, long before the advent of international law, conquering land seemed simple: the strongest army won the land, and its freshly planted flag flapped in the breeze above the newly conquered territory as a symbol of the acquisition. No rules existed to ensure fairness. Armies composed of superior fighters seized land, or those skilled enough to master the risk of exploration declared new, unsettled ground for their kingdoms. For thousands of years, modern man followed this seemingly savage "first in time, first in right" rule of property.

Man, after all, acts as a selfish creature—squabbling with his fellow inhabitants over anything he wants to control, not unlike children fighting over toys. By the mid-twentieth century, however, the war-scarred international community realized that an advisory council or discussion forum needed to address international property issues before more conflict erupted in the advanced global age. Laws needed to act as a moral baby-sitter to ensure that nations played the property game fairly and that no nation denied another nation its due right to areas not yet conquered or populated. In the post-modern era, even if prompted by apprehension and distrust, the global community exuded an ideal of equity. Unfortunately, nothing in this world seems fair.

From the beginning of time, civilizations intelligent or fortunate enough to make use of resources within their reach excelled and dominated. Man intuitively exploits natural resources and develops technology to better his existence. Human nature demonstrated this trait from the start—represented by innovations such as the wheel, tools and weapons, medicine, and the domestication of animals.[6] At some point, however, the cradle of civilization lost its foothold. Many civilizations, though globally dominant in centuries past, lag behind in the post-modern world of technological advancement—and

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[5] *Id.*

[6] *Id.*

many others never even got a fighting chance due to factors such as disease, famine, natural disaster, or lack of natural resources.

However, in the post-modern age, floating somewhere in the peace-and-love era encompassing the 1960s, the newly-civilized international community decided that the barbaric property principle "first in time, first in right" should not be applied to the deep seabed, Antarctica, or outer space—the only regions not controlled by any one sovereign.[7] This theory sprang up generally because exploitation of valuable resources in these regions presented developing nations with an opportunity "to share in the world's resources rather than remain economically marginalized[,]" and because each of these areas presented a dilemma regarding habitation and defense.[8] No nation occupied these territories and no nation desired a "race to own" without a guarantee of who would emerge victorious. Because these zones harbor coveted natural resources, every nation craved a piece of the action without the hurry-hurry state of mind regardless of economic or technological stance.

This article examines the ineffectiveness of the international community's novel approach to property law and scrutinizes the inconsistent, ambiguous language in outer space property treaties. Section II provides a history of the common heritage of mankind principle as applied to areas on earth and in outer space. Section III analyzes relevant space law and applies it to the acquisition of natural resources in space, property rights on the moon, and the appropriation of satellite orbit slots. Finally, Section IV concludes with the recognition that, due to man's inherent nature, space faring nations will resort to the age-old, primitive "first in time, first in right" rule of property that the international community attempted to avoid.

II. THE COMMON HERITAGE OF MANKIND PRINCIPLE

Understanding the extension of property laws to outer space and celestial bodies requires comprehension of the underlying common heritage ideal, the essence of man's attempt to civilize outer space. Under the common heritage of mankind principle (the "common heritage principle" or the "principle"), nations

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[7] Julie A. Jiru, Comment, *Star Wars and Space Malls: When the Paint Chips Off a Treaty's Golden Handcuffs*, 42 S. TEX. L. REV. 155, 159 (2000).

[8] Lea Brilmayer & Natalie Klein, *Land and Sea: Two Sovereignty Regimes in Search of a Common Denominator*, 33 N.Y.U. J. INT'L L. & POL. 703, 726 (2001).

manage, rather than own, certain designated international zones.[9] No national sovereignty over these spaces exists, and international law (i.e., treaties, international custom) governs. The common heritage of mankind principle deals with international management of resources *within* a territory, rather than the territory itself.[10]

Because the principle renders claim of title to designated international, common heritage areas worthless and unrecognized, the issue for countries becomes access.[11] The common heritage principle seems unconcerned with *ownership* of designated areas, but rather focuses on the "uses of them for the benefit of humankind, to serve the common interest of peoples everywhere."[12] It may prove difficult, however, to distinguish the idea of access from that of ownership. As with most international principles, a split between less-developed nations and developed nations over the interpretation of the common heritage principle evolved.

Less-developed nations believe that international areas designated for the common heritage of mankind do not belong to any one sovereign, but instead to all nations.[13] Therefore, any resource or benefit derived from those resources, or the use of them, should serve all of mankind.[14] Referring to it as a "common property" approach, less-developed nations assert that there should be common management of such areas, with a singular group possessing exclusive rights to exploit natural resources and distribute those resources *equally* to all nations, regardless of which nations actually funded the effort (either economically or by developing the technology or both).[15]

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[9] Harminderpal Singh Rana, Note, *The "Common Heritage of Mankind" & the Final Frontier: A Revaluation of Values Constituting the International Legal Regime for Outer Space Activities*, 26 RUTGERS L.J. 225, 228 (1994) (citing Christopher C. Joyner, *Legal Implications of the Concept of the Common Heritage of Mankind*, 35 INT'L & COMP. L.Q. 190, 191 (1986)).

[10] Christopher C. Joyner, *The Concept of the Common Heritage of Mankind in International Law*, 13 EMORY INT'L L. REV. 615, 620 (1999) (reviewing KEMAL BASLAR, THE HAGUE (1998)).

[11] Rana, *supra* note 9, at 229.

[12] Joyner, *supra* note 10.

[13] Mary E. Schwind, *Open Stars: An Examination of the United States Push to Privatize International Telecommunications Satellites*, 10 SUFFOLK TRANSNAT'L L. REV. 93, 94 (1986).

[14] *Id.*

[15] Rana, *supra* note 9, at 230-31.

Under this interpretation, a nation that did not contribute financially, nor had any involvement in developing the necessary technology, would reap the benefits of the exploitative activity. Not only does this seem inherently unfair, but this hardly provides an incentive for technologically advanced nations to conduct expeditions. Additionally, this interpretation does not provide incentive for less-developed nations to develop technology or fund exploration. Why fund the research and development when the reward will be the same?

Developed nations interpret the principle as meaning that "anyone can exploit these natural resources so long as no single nation claims exclusive jurisdiction" over the area from which they are recovered.[16] Simply stated, every nation enjoys access and each nation must make the most of that access. The heritage lies in the *access* to the resources, not the technology or funding to exploit them. Developed nations may be prudent to interpret the principle in this manner because developed nations most likely possess the economic means and the technology to exploit natural resources.[17] Developed countries argue that because they spend their time and money developing the technology that enables them to harvest resources, and they fund the expeditions that collect the resources, forcing them to share those benefits with countries that have contributed little or nothing to the effort would be unjust.[18] Developed nations do not like the principle included in treaties, stating that severely reducing the economic incentive discourages the development of technology to exploit natural resources,[19] a viewpoint all too clear for capitalistic societies.

A. The Common Heritage of Mankind Principle As Applied To Areas On Earth

1. The Deep Seabed

In the midst of a war-ridden age, Pindar stated, "Seek not, my soul, the life of the immortals; but enjoy to the fullest the resources that are within thy reach."[20] Perhaps one can imagine

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[16] Schwind, *supra* note 13, at 97, *see also* Rana *supra* note 9, at 230-31.

[17] Stephen D. Mau, *Equity, the Third World and the Moon Treaty*, 8 SUFFOLK TRANSNAT'L L. REV. 221, 232-33 (1984).

[18] *Id.* at 236.

[19] Grier C. Raclin, *From Ice to Ether: The Adoption of a Regime to Govern Resource Exploitation in Outer Space*, 7 NW. J. INT'L L. & BUS. 727, 738-39 (1986).

[20] *See* http://www.quotationspage.com (last visited Jan. 25, 2005).

that the resources to which Pindar referred include the sea. For several millennia, man utilized the sea for trade, commerce, and as a corridor to far-away destinations. Land-locked states fought to control seaside soil, for those with access to the sea dominated, but no nation *owned* the sea. The possibility of sovereignty over the sea seemed virtually impossible due to the difficulty of defending the territory and the impossibility of permanent habitation.[21]

The need for an international law governing the deep seabed began in the late 1960s when the mining of valuable minerals found on the seabed floor became possible.[22] Arvid Pardo, Malta's former Ambassador to the United Nations (UN) and hailed as the forefather of the common heritage of mankind principle in the law of the sea,[23] stated:

> The objective of the Maltese proposal was to replace the principle of freedom of the high seas by the principle of common heritage of mankind in order to preserve the greater part of ocean space as a commons accessible to the international community. The commons of the high seas, however, would be no longer open to the whims of the users and exploiters; it would be internationally administered. International administration of the commons and management of its resources for the common good distinguished the principle of common heritage from the existing traditional principle of the high seas as *res communis*.[24]

Pardo understood the need for an international common body to exploit and distribute the resources.[25] Developing nations embrace this approach—referred to as the "common property" approach. Without an international regime, nations feared (and rightly so) that those with the greatest economical and technological advantages would reap the greatest rewards.[26] Therefore, when mining the deep seabed became feasible, the Third Law of the Sea Convention established the International Seabed Authority, which licenses and regulates mineral exploration of the seabed in the international areas (the seabed and

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[21] Brilmayer & Klein, *supra* note 8, at 707-08.

[22] *Id.*

[23] Rana, *supra* note 9, at 235 (citing L.F.E. Goldie, *A Note on Some Diverse Meanings of "The Common Heritage of Mankind"*, 10 SYRACUSE J. INT'L L. & COM. 69, 86 (1983)).

[24] *Id.* at 236.

[25] Brilmayer & Klein, *supra* note 8, at 726.

[26] *Id.*

ocean floor beyond the limits of national jurisdiction, and thus deemed to be the common heritage of mankind).[27]

The fundamental principles of the administration, indicated in the Convention and in the Implementation Agreement adopted by the United Nations General Assembly in 1994, include that:

1) the mineral resources of the international seabed area shall be the common heritage of mankind and not subject to appropriation by any State;[28]
2) all rights in the mineral resources of the international area shall be vested in mankind as a whole and the economic benefits from deep seabed mining are to be shared on a nondiscriminatory basis for the benefit of mankind as a whole;[29]
3) the International Seabed Authority is established as the organization to administer such resources and to promote and encourage the conduct of the marine scientific research in the international area.[30]

Unfortunately, the vague reference to the common heritage of mankind ideal fails to settle the dispute between the developed and less-developed nations. Although the Third Law of the Sea Convention advocates "for the *equitable* sharing of financial and other economic benefits derived from activities in the [a]rea[,]" the dispute between nations continues.[31] "Equitable" seems synonymous with "fair;" therefore, a literal interpretation of this provision would suggest that financial and economic benefits would be proportionate to the economic, scientific, or technological effort put forth by each state.[32] "Equal," however, means equivalent or identical.[33] A literal interpretation of this would imply that financial or economic benefits would be divided among all states, regardless of effort or input of each state.[34] Because the United States objects to the latter interpretation, it refused to sign the seabed agreement; instead, along

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[27] Jiru, *supra* note 7, at 160.

[28] Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of Dec. 10, 1983, July 28, 1994, preamble, 33 I.L.M. 1309, 1836 U.N.T.S. 3.

[29] *See id.*

[30] *Id.* at annex 5.

[31] Jiru, *supra* note 7, at 161.

[32] *See generally* Kelly M. Zullo, Note, *The Need to Clarify the Status of Property Rights in International Space Law*, 90 GEO. L.J. 2413 (2002).

[33] MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 391 (10th ed. 1996), *available at* http://www.m-w.com/cgi-bin/dictionary?book=dictionary&va=equal.

[34] *See generally* Zullo, *supra* note 32.

with other developed nations, the United States established its own system for regulating seabed exploitation.[35]

2. Antarctica

In the 1820s, when British, American, and Russian expeditions began exploring the area near the South Pole, many believed that the South Pole consisted simply of many islands of ice.[36] In 1840, Antarctica became known as a continent, and in the early 1900s, seven countries claimed sovereignty over eighty-five percent of Antarctica, though no other country pays credence to those claims.[37] "Small uncommercial quantities" of iron ore, chromium, copper, gold, nickel, platinum, coal and hydrocarbons, and other minerals are found within the Antarctic continent.[38]

The Antarctic Treaty came into force in the early 1960s, when the international community strived to establish that some areas simply belong to all inhabitants of the earth. The Antarctic Treaty system exists to "facilitate peaceful international cooperation for scientific research and environmental preservation."[39] The Antarctic Treaty does not expressly include common heritage language, but application of the principle to Antarctica appears widely accepted.[40] This treaty "freezes" the claims by the seven countries claiming ownership, though the United States and Russia each reserved rights to claim sovereignty.[41] Also, mining on the continent can only occur after "unanimous consent of all signatories," and no mining has occurred to date.[42]

B. The Common Heritage Principle As Applied To Areas In Outer Space

The power struggle between the United States and the former Soviet Union, the two nations involved in the race to space, along with the paranoia and suspicion resulting from the Cold

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[35] Jiru, *supra* note 7, at 161.

[36] Central Intelligence Agency, *The World Factbook 2002: Antarctica* , *at* http://www.cia.gov/cia/publications /factbook/geos/ay.html (last visited Feb. 8, 2005) [herinafter *Antarctica*].

[37] Jiru, *supra* note 7, at 162.

[38] *Antarctica, supra* note 36.

[39] Jiru, *supra* note 7, at 162 (citing Barbara Ellen Heim, *Exploring the Last Frontiers for Mineral Resources: A Comparison of International Law Regarding the Deep Seabed, Outer Space, and Antarctica*, 23 VAND. J. TRANSNAT'L L. 819, 839 (1990)).

[40] Rana, *supra* note 9, at 237-38.

[41] *Antarctica, supra* note 36.

[42] Jiru, *supra* note 7, at 162.

War, fueled the avoidance of a "race to own" any part of space.[43] The former Soviet Union emerged as the pioneering leader when it launched the first satellite (Sputnik) into orbit in 1957[44] and landed the Luna IX on the moon in 1966,[45] sending waves of alarm through the United States, which feared that the Soviets would stake a property claim in the moon. This prompted the United States to initiate treaties limiting activities in outer space to peaceful purposes and preventing any state from exercising ownership.[46] The following two sections focus on the common heritage concept as applied to the 1967 Outer Space Treaty and the 1979 Moon Treaty.

1. The 1967 Outer Space Treaty

The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies ("the Outer Space Treaty") became the "cornerstone of international space law"[47] and the first treaty drafted by the United Nations' Committee on Peaceful Uses of Outer Space (COPUOS).[48] As with the Antarctica Treaty, the Outer Space Treaty promotes freedom of access for research and scientific investigation. The treaty denies land ownership rights to any one sovereign, and instead states that "exploration and use of outer space, should be carried on for the benefit of all peoples irrespective of the degree of economic or scientific development."[49]

The Outer Space Treaty does not use the term "common heritage of mankind," but rather uses the term "province of mankind," stating that "exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries . . . and

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[43] *Id.* at 156.

[44] National Aeronautics and Space Administration, *Sputnik, at* http://history.msfc.nasa.gov/rocketry/34.html (last visited Feb. 3, 2005).

[45] National Aeronautics and Space Administration, *Destination Moon: A History of the Lunar Orbiter Program, at* http://www.hq.nasa.gov/office/pao/History/TM-3487/app-c.htm (last visited Feb. 3, 2005).

[46] Stacey L. Lowder, Comment, *A State's International Legal Role: From the Earth to the Moon,* 7 TULSA J. COMP. & INT'L L. 253, 268 (1999).

[47] Ty S. Twibell, Note, *Space Law: Legal Restraints on Commercialization and Development of Outer Space,* 65 UMKC L. REV. 589, 592 (1997).

[48] Rana, *supra* note 9, at 240.

[49] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410 (entered into force October 10, 1967).

shall be the province of all mankind."[50] According to Professor Armel Kerrest,[51] "province" seems associated with the idea of territory or the responsibility over a territory, thus giving the notion of control rather than "property and possible wealth."[52] Professor Kerrest states,

> By itself the common control of humanity over outer space and celestial bodies does not deal with appropriation and property. It only means that the rules over outer space and celestial bodies can only be made by Humanity as a whole. No state . . . can rule exploration and use of outer space, [or] can exercise any territorial jurisdiction over it without the agreement of Humanity.[53]

Professor Kerrest further states that the idea of "heritage," however, seems directly linked with property and ownership.[54] He refers to the Law of the Sea Convention, which declares that "the sea floor and its resources are the common heritage of mankind," and suggests that this language makes it clear "that the property of these resources is [recognized] to a legal person: humanity."[55] Unfortunately, "humanity" seems vague. Professor Kerrest questions, "Who is humanity or[,] more precisely[,] who is entitled to speak for humanity?"[56] In a one-country, one-vote system, the majority usually consists of the less-developed nations due to their great number.[57] More likely than not, the majority does not include space-faring nations.

2. *The Moon Treaty*

As of February 1, 2001, only nine states ratified the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the "Moon Treaty"), and an additional five signed it.[58] Most of the Moon Treaty just rehashes the Outer Space Treaty, though some new provisions do appear.[59]

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[50] *Id.* art. 4.

[51] Armel Kerrest, *Outer Space: Res Communis, Common Heritage or Common Province of Mankind?, available at* http://fraise.univ-brest.fr/~kerrest/IDEI/Nice-appropriation.pdf (last visited Feb. 8, 2005).

[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] *Id.*

[56] *Id.*

[57] *Id.*

[58] Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 18 I.L.M. 1434, 1363 U.N.T.S. 3 [hereinafter Moon Treaty].

[59] Jiru, *supra* note 7, at 163.

Because of these new provisions, many countries refused to sign.[60] As with the Outer Space Treaty, the common heritage ideal materializes, coated at times in the "province of all mankind" language.[61] This language first appears in Article 4, which states, "exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit . . . of all countries."[62] As Professor Kerrest notes, the province of all mankind "is not the moon and celestial bodies[,] but the *exploration and use.*"[63] This interpretation aligns itself with the argument of the developed nations: the heritage lies in the access.

In Article 11 of the Moon Treaty, the common heritage of mankind language surfaces, and the article states, "[t]he moon and its natural resources are the common heritage of mankind . . ." and states may explore and use the moon without discrimination.[64] The Article continues by requiring the future establishment of an international regime "to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible,"[65] reminiscent of the regime established to regulate exploitation of the seabed. Unfortunately, no such regime yet exists; the Moon Treaty only provides that one shall exist in the future.[66]

The United States, along with many other nations, refused to sign the treaty, in large part due to the common heritage ideal.[67] If the United States' behavior in dealing with the International Seabed Authority indicates its future actions, the United States likely will enact its own system governing the exploitation of celestial bodies. Unbound by the Moon Treaty and certain to develop the necessary technology sooner than other nations, the United States will continue to follow the barbaric "first in time, first in right" theory of property despised by less-developed nations.

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[60] *Id.* (stating that developed nations and less-developed nations disagree on issues relating to ownership and appropriation of resources derived from the moon). These issues will be addressed further in this note, *infra.*

[61] *Id.*

[62] Moon Treaty, *supra* note 58.

[63] Kerrest, *supra* note 51.

[64] *See* Moon Treaty, *supra* note 58, art. 11.

[65] *Id.*

[66] Heidi Keefe, *Making the Final Frontier Feasible: A Critical Look at the Current Body of Outer Space Law*, 11 SANTA CLARA COMPUTER & HIGH TECH. L.J. 345, 356 (1995).

[67] *Id.* at 357.

III. PROPERTY OWNERSHIP AND APPROPRIATION IN OUTER SPACE

In the age of private and commercial wealth, asserting ownership in outer space seems no longer unimaginable, but it may be against international law.[68] As stated previously, the Cold War between the United States and the former Soviet Union and the simultaneous race to space prompted paranoia that one country would gain "irreversible advantage by militarizing outer space."[69] Referring to the "first in time, first in right" property principle that dominated the earth for thousands of years, Arthur J. Goldberg, the U.S. Representative to the United Nations General Assembly stated, ". . . as we stand on the threshold of the space age, our first responsibility as governments is clear: we must make sure that man's earthly conflicts will not be carried into outer space. . . ."[70] Though this intention seems noble, reversing human behavior spanning several thousand years may prove impossible. Man intuitively exploits resources within his reach to better *himself*, not necessarily his neighbor.

In looking at the big picture, one can easily identify that space resources nearest to earth, and thus the easiest to exploit, appear limited. The universe may stretch indefinitely in all directions. However, without drastic technological advances, man seems tethered to earth—incapable of traveling great distances in space. For unmanned missions, the issue becomes expense: exploitation activities closer to earth cost less than expeditions farther away. Therefore, celestial bodies such as the moon and near-earth asteroids exist as limited resources, not because of their rarity, but because of their close proximity to earth.[71] On the other hand, satellite orbit slots could become a finite resource,[72] as an orbit slot can only accommodate a fixed number of satellites. International law should govern the exploitation and use of such resources, as well as the appropriation of celestial territories. The resources include minerals mined from the moon or other celestial bodies, and territory appropriation en-

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[68] Ezra J. Reinstein, *Owning Outer Space*, 20 NW. J. INT'L L. & BUS. 59, 62 (1999).

[69] *Id.*

[70] *Id.*

[71] *Id.* at 63.

[72] Satellite resources become a finite resource due to the limitation on capacity. If the user utilizes the resource properly, the orbit slot remains infinitely renewable.

compasses not only celestial surfaces, but satellite orbit slots as well.[73]

A. Property Rights in Natural Resources in Outer Space

Article 6 of the Moon Treaty promotes "freedom of scientific investigation . . . [by allowing states to] . . . collect on and remove from the moon samples of its mineral and other substances," and Article 8 allows exploitation "on or below [the moon's] surface."[74] The treaty further states that "[s]uch samples shall remain at the disposal of those States Parties which caused them to be collected and may be used by them for scientific purposes."[75]

When construing this language, one likely will interpret that states can collect samples of minerals for research, which effectively exhibits ownership over those samples.[76] The "province of mankind" language weaved throughout the treaty becomes notably absent here.[77] Clearly, the ideal would seem to mandate that samples be shared, either equitably or equally, with all of mankind.

Sample collection completely contradicts the aforementioned language in Article 11 of the Moon Treaty which states that "[n]either the surface nor the subsurface of the moon, *nor any part thereof or natural resources in place*, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person."[78] A logical interpretation would require that "part of its natural resources" includes mineral samples from the moon. With such incompatible language within the body of the Moon Treaty, no mystery exists as to why developed nations' interpretations differ from that of the less-developed nations. Further, with the absence of an international regime, as called for in Article 11, reconciliation of the conflicting provisions seems unlikely.

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[73] *Id.* at 64.

[74] Moon Treaty, *supra* note 58, art. 6, 8.

[75] *Id.* art. 6.

[76] Rana, *supra* note 9, at 247-48. The author notes that data collected from such samples receives similar scrutiny. However, such issues exist beyond the scope of this comment, which focuses on territorial space and exploitation activity, rather than data collected from such activity.

[77] Moon Treaty, *supra* note 58, art. 6-8.

[78] *Id.* art. 11 (emphasis added).

B. Property Rights on the Surface of the Moon

Article 8 of the Moon Treaty allows states to: 1) "[l]and their space objects on the moon and launch them from the moon"; and 2) "[p]lace their personnel, space vehicles, equipment, facilities, stations and installations anywhere on or below the surface of the moon."[79] The treaty also provides that "[p]ersonnel, space vehicles, equipment, facilities, stations and installations may move or be moved freely over or below the surface of the moon," and such activities "shall not interfere with the activities of other States Parties on the moon."[80] Article 9 of the Moon Treaty further clarifies this by declaring that states "may establish manned and unmanned stations on the moon," but requiring that "a station shall use only that area which is required for the needs of the station . . ." and shall not "impede the free access" of other states.[81]

Again, the line appears blurred. A party could place a semi-permanent station on the moon which both occupies the surface and, by its nature, blocks access to that specific area. Continued occupancy means "taking possession of that which at the moment is the property of no man, with the view . . . of acquiring the property in it for yourself."[82] Therefore, planting an unmanned space station on the surface of the moon, well within the allowances of the Moon Treaty, constitutes effective ownership—but without the possessory label. States may engage in activities equivalent to ownership, as long as no one calls it "ownership." What will happen when two nations seek to plant unmanned stations in the same area? One can only surmise that nations will resort to the primitive, but familiar, "first in time, first in right" theory of property law. An irony exists in the probable occurrence of this happening, as the international community enacted the Moon Treaty specifically to avoid this behavior.

C. Appropriation of Satellite Orbit Slots

The Outer Space Treaty, which governs outer space, prevents *national* sovereignty claims, but does not expressly prohibit *private* appropriation, unlike the Moon Treaty, which prohibits both national and private appropriation of the moon and other

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[79] *Id.* art. 8.

[80] *Id.*

[81] *Id.* art. 9.

[82] Jiru, *supra* note 7, at 158.

bodies.[83] In the past decade, the private-sector investment in telecommunications satellites has become a billion-dollar industry,[84] and the geo-stationary orbit, the orbital space above the Equator, likely exists as "the most valuable of all space resources to date."[85] Satellites in geo-stationary orbit travel at the same speed as the earth, making the satellites appear stationary over a fixed point on earth and casting large footprints over highly populated areas.[86] In fact, a satellite in geo-stationary orbit encompasses a field of view of 42% of the earth's land surface.[87] Like the law governing the use of the seabed, the international community established an international regime to regulate and coordinate spectrum use.

The International Telegraph Union (ITU), supplemented by the International Telecommunications Convention (ITC), became the technical body that regulates international telecommunications.[88] The ITU utilizes two methods of orbit slot allocation: the *posteriori* system and the *a priori* system. Under the *posteriori* system, the ancient "first in time, first in right" property theory, the ITU assigns orbit slots as the need arises.[89] Obviously, developed nations who possess the technology necessary to exploit the space favor this system.[90] The *a priori* system, however, allots a number of slots to each nation, regardless of whether use of the slots will ever occur.[91] Because less-developed nations fear that they will lose access to orbital slots due to their insufficient technology, they prefer the latter system.[92]

Entities can take advantage of an *a priori* system. For example, the small Pacific island nation of Tonga registered for sixteen geo-stationary orbit allotments with the ITU.[93] Tonga made the filings on behalf of Friendly Islands Communications from 1988 to 1990, when the ITU system allowed a country to register a

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[83] Adrian Copiz, *Scarcity in Space: The International Regulation of Satellites*, 10 COMMLAW CONSPECTUS 207, 218 (2002).

[84] Reinstein, *supra* note 68, at 59.

[85] *Id.* at 64.

[86] Zullo, *supra* note 32, at 2420-21.

[87] Copiz, *supra* note 83, at 210.

[88] Susan Cahill, *Give Me My Space: Implications for Permitting National Appropriation of the Geostationary Orbit*, 19 WIS. INT'L L.J. 231, 232 (2001).

[89] *Id.* at 238.

[90] *Id.*

[91] *Id.*

[92] *Id.* at 239.

[93] Copiz, *supra* note 83, at 208.

position for up to nine years before a satellite was launched.[94] Because Tonga "lacked a genuine need for so many orbital allotments in the Pacific Rim portion of the GSO," the international community made its anger known.[95] The "outrage" of the international community persuaded Tonga to withdraw its request for ten of the sixteen allotments.[96] However, Tonga leased one of the remaining allotments and auctioned off the other five allotments for $2 million per year for each orbit.[97] According to at least one commenter, "[t]his rental and auctioning of slots supports the perception that property rights do exist with respect to individual orbits."[98]

Due in part to the incident with Tonga, the ITU now requires that the majority of slots applied for must be used directly by the countries requesting the slots.[99] The ITU likely wants to discourage the leasing and sale of geo-stationary orbit slots.[100] However, an issue still exists with respect to the Outer Space Treaty and orbit slot regulation.

The ITU distributes orbit slots to those who provide the most efficient use of the resource, reasoning that distributing slots to those not capable of utilizing them would waste a finite resource.[101] It follows that, by following an *a priori* system, the ITU would grant constructive national appropriation when allocating orbital slots to nations—an express prohibition under the Outer Space Treaty.[102] Regardless of the prohibition, some nations attempted to claim the geo-stationary orbit.

In 1976, several less-developed nations located at the equator claimed territorial sovereignty over the geo-stationary orbit with the Bogota Declaration.[103] The nations contended that the natural resources of each sovereignty necessarily included the geo-stationary orbit above that territory.[104] Though the Declaration directly conflicted with the Outer Space Treaty which prohibits national appropriation of space, it became "effective as a political device that brought attention to developing countries' con-

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94 *Id.*
95 *Id.*
96 *Id.*
97 *Id.*
98 Cahill, *supra* note 88, at 244.
99 *Id.*
100 *Id.*
101 Zullo, *supra* note 32, at 2421.
102 *Id.*
103 *Id.*
104 Cahill, *supra* note 88, at 240.

cerns over being prohibited access to the geo stationary orbit by developed countries who already possessed the technological skills and resources necessary to utilize the resource."[105] This resulted in the implementation of Article 33 of the ITU's Radio Regulations, which requires that the ITU consider "the special needs of developing countries and the geographical situation of particular countries."[106]

The entire system directly conflicts with the Outer Space Treaty if the ITU grants slots to nations because the Outer Space Treaty expressly prohibits national appropriation.[107] The ITU seems to focus on the idea of "access" rather than ownership.[108] However, despite the label, when a satellite fills an orbit slot, the party occupies that space and effectively asserts sovereignty. This concept seems no different than an unmanned station on the moon; the space being used becomes inaccessible to others.

IV. CONCLUSION

Despite the fierce intent of the international community, full acceptance of the common heritage principle will come slowly, if at all. Though evolution shapes life, such progression requires time. Life on earth shows that physical evolution results when a *need* arises. However, man's broad acceptance of a common heritage approach to land and its resources demands a *psychological* evolution rather than a physical change mandated by his environment. Man seems incapable of such change; consequently, psychological evolution will require intense, long-lasting global effort.

The international community cannot reverse thousands of years of behavior in one generation. Ancient, nomadic man fought over land resources when permanent occupation of a single area proved impossible due to the essential pursuit of food. Later, when farming and agriculture replaced nomadic existence, man fought over the land itself—as well as its resources. As technology advances, this pattern will continue into space and other previously uninhabitable areas on earth.

Acceptance of the common heritage ideal (psychological evolution) will better only the existence of nations *currently* una-

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105 *Id.*

106 *Id.*

107 Copiz, *supra* note 83.

108 Cahill, *supra* note 88, at 241.

ble to fully exploit the resources. History illustrates that man evolves only to survive or better his existence. For example, many theorists believe that man became bipedal only when the grasslands gradually replaced the forests, thus compelling man to stand upright (to see game over the grass). Sickle cell anemia, an affliction of many Africans, effectively protects against malaria, a deadly disease common in Africa. Similarly, skin pigmentation of native peoples, offering crucial protection against the sun's ultraviolet rays, varies depending on proximity to the equator. Unfortunately, no such physical need exists here.

Technologically advanced nations do not feel compelled to harmonize their mindset with the common heritage principle. Advanced nations will increasingly continue to exploit space resources, leaving the less-developed nations in their wake. Most likely, less-developed nations will also disregard the common heritage ideal as they develop the necessary technology and rediscover the sheer advantage of the "first in time, first in right" property theory. Only nations without hope of exploitation urge *equal* distribution of the resources. Those who exploit space resources desire to keep the fruits of their labor to themselves. Throughout history, the more powerful man has innately and strategically kept his foot on the neck of the weak. The quest for property in space will prove no different, and the inconsistency of international space law confirms man's lack of control over his true substance.

Man mirrors the cyclical nature of the universe, where everything follows a pattern. In *The Sun Also Rises*, Hemingway expressed that each generation carries on as the one before it—resolving nothing—because the rhythmical essence of life remains unchanged.[109] Aldous Huxley expressed a similar sentiment in his realization that sometimes only the name or the process changes, but the underlying theme remains eternal.[110] Man, like the universe, follows a pattern—one of acquisitive need and selfish procurement. The ancient "first in time, first in right" property theory will come full circle: ancient man first fought over earth's resources—and then the land itself when occupation became feasible. To the dismay of less-developed nations, this cycle will continue in space, as man exploits celestial

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[109] *See generally* ERNEST HEMINGWAY, THE SUN ALSO RISES (Charles Scribner's Sons 1926).

[110] *See supra* text accompanying note 1.

resources and later develops the ability to occupy celestial bodies.

As a solution, the international community could agree to abstain from exploitation for a period of time, as in the Antarctic Treaty.[111] Though such a moratorium obviously leaves the issue for the next generation to resolve, perhaps a subsequent generation would embrace more fully the common heritage approach. Right now, man simply seems unprepared for such a concept.

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[111] *See* Naval Treaty Implementation, Antartic [sic] Treaty, *available at* http://www.nawcwpns.navy.mil/~treaty/Ant.html (last visited Feb. 8, 2005) (stating that representatives of twelve nations signed the Antarctic Treaty on December 1, 1959, and the treaty became effective in 1961). Those original signatories were: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, United Kingdom, United States and the USSR. *Id.* The Antarctic Treaty applies to the area south of 60° South latitude. *Id.* Through this agreement, the countries active in Antarctica consult on the uses of the whole continent, with a commitment that it should not become the scene or object of international discord. *See also Antarctica, supra* note 36 (stating that the 24th Antarctic Treaty Consultative Meeting was held in Russia in July 2001). At the end of 2001, there were forty-five treaty member nations: twenty-seven consultative and eighteen non-consultative. Consultative (voting) members include the seven nations that claim portions of Antarctica as national territory (some claims overlap) and 20 nonclaimant nations. *Id.* The U.S. and Russia have reserved the right to make claims and the U.S. does not recognize the claims of others. *Id.* Antarctica is administered through meetings of the consultative member nations. *Id.* Decisions from these meetings are carried out by these member nations (within their areas) in accordance with their own national laws. *Id.*


SOUTHERN METHODIST UNIVERSITY
DALLAS, TEXAS